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A device to detect or generate optical signals

Abstract

The present invention relates to a device to detect optical signals with means to generate at least one reference light ray which has frequency shift and/or frequency modulation or phase shift and/or phase modulation and/or time displacement over the optical signal to be detected, with means with which the optical signal to be detected and/or the reference light ray(s) can be aligned in such a way that they can be brought into interference and with at least one detector with a demodulator by means of which amplitude modulation can be detected. A high spectral resolution of the device is achieved even when small optical elements are used by at least one wavelength-dependent element being provided by means of which the angle(s) of the light rays brought to interference can be changed in dependence on the wavelength and by at least one of the detectors being designed in such a way or being in combination with a demodulator and/or with optical elements in such a way that a time and/or spatial modulation of the intensity with reference to the whole or parts of the detected ray cross-section can be measured. The invention relates further to a device to generate optical signals by means of modulation of optical carriers and the use of a device in accordance with the invention as the optical receiver or optical modulator or as the spectrometer.